

monthly water situation report

South East Region

Summary – February 2012

A further month of below average rainfall has resulted in very low groundwater levels and river flows for the time of year. With only limited time remaining before plants start growing and the days get longer and warmer, the chances of groundwater levels and river flows recovering to more normal spring conditions before the summer are low.

Rainfall

Rainfall for February was just under 40% of the long term average in the South East. This comes on top of a prolonged period of low rainfall; 5 of the past 6 months and 10 of the past 17 months have had below average rainfall. This month was the driest February since 1998 for South East Region, and the period from October 2010 to February 2012 has been the driest since 1922. Most of the precipitation during February fell as snow on the 4th which thawed gradually over the next 4 days.

The winter so far has been the driest since 1992 with only slightly more than two thirds of the average rainfall for October to February. As a result of the shortage of rain, drought conditions were declared on the 20th by the Secretary of State.

Soil Moisture Deficit, Recharge and Groundwater Levels

Significant Soil Moisture Deficits remain across many of the permeable catchments, showing how dry the winter has been. Estimated recharge for the winter period is as low as 12% of long term average in the Chalk outcrop of the Berkshire Downs and Chilterns as well as parts of the North Downs.

The persistence of dry soils and the resultant low recharge is demonstrated in the groundwater levels across the region. Of the 16 key sites, six have *exceptionally low* levels for the end of February, six *notably low* and one *below normal*. Only Riddles Lane has levels within its *normal* range for the time of year. The general trend was one of falling groundwater levels, with only Rockley in the Marlborough Downs and Clanville Lodge in the Hampshire Downs recording a rise in levels since last month. There are five key sites where no rise in levels has been seen yet this winter; Stonor, Ashley Green and Lilley Bottom in the Chilterns and Well House Inn and Sweeps Lane in the North Downs. Ashley Green in the Chilterns, Sweeps Lane in the North Downs and Little Bucket in Kent had the lowest levels recorded during February.

River Flows

Mean River flows for February at the key sites shown in this report were *exceptionally low* for the time of year at ten sites, *notably low* at ten sites and *below normal* at one site. The lack of rainfall and low groundwater levels meant that after a small response to snow melt, flows generally decreased throughout the month. No flood alerts or warnings were issued this month.

The River Ouse at Gold Bridge in East Sussex had the lowest February flows on record, as did the Great Stour at Horton in Kent. The River Medway at Teston and five other key sites had the second lowest February flows on record. The naturalised flow for the River Thames at Kingston was the lowest for February since 1976.

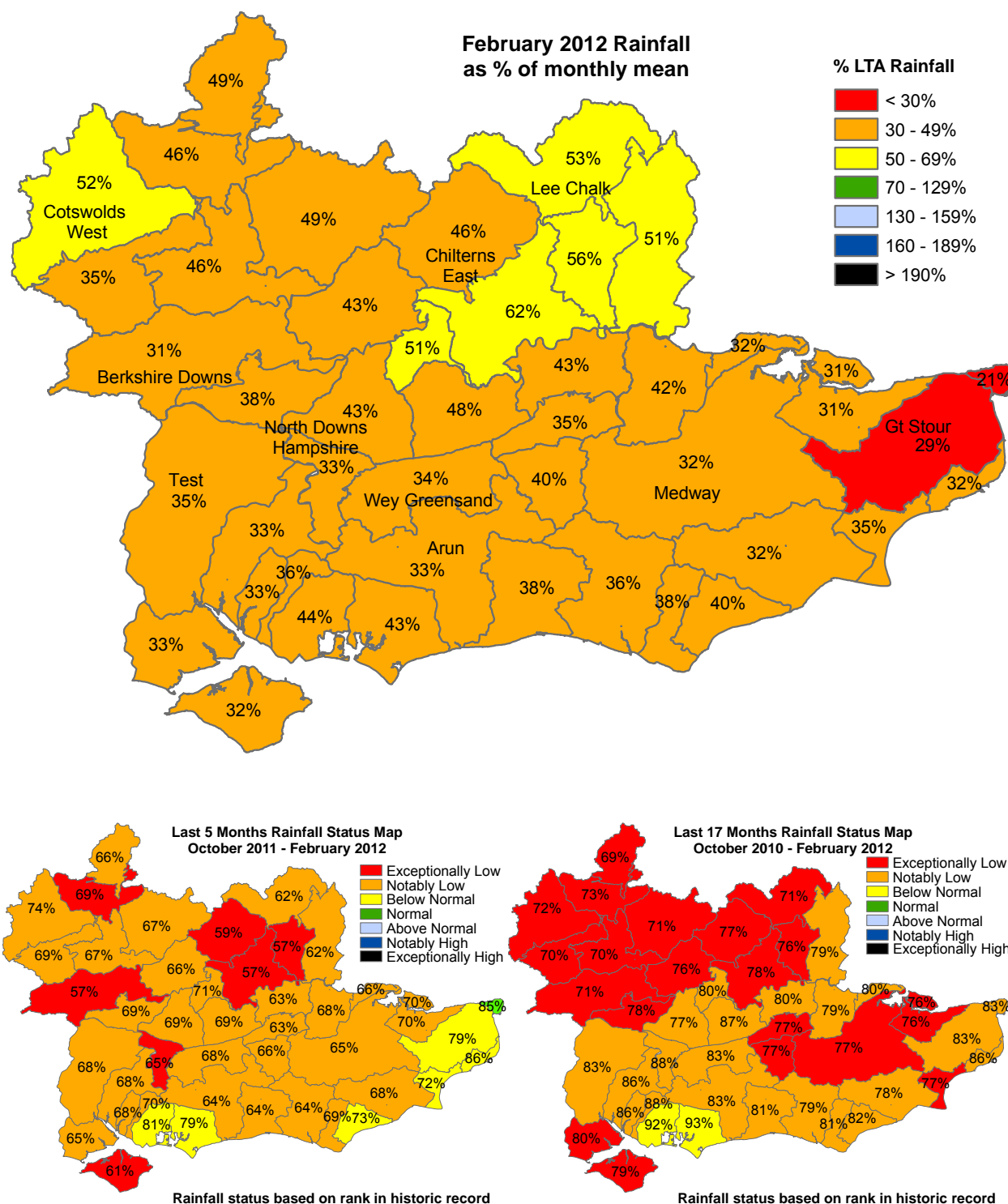
Reservoir Storage/Water Resource Zone Stocks

Reservoir stocks increased during the month, with the exception of Bewl, Darwell and Weir Wood. Ardingly, Arlington, Bewl and Darwell are below or close to their minimum recorded storage for February. Only those reservoirs filled by pumping from the Thames were above average for the time of year.

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Contact details: 01189 535890

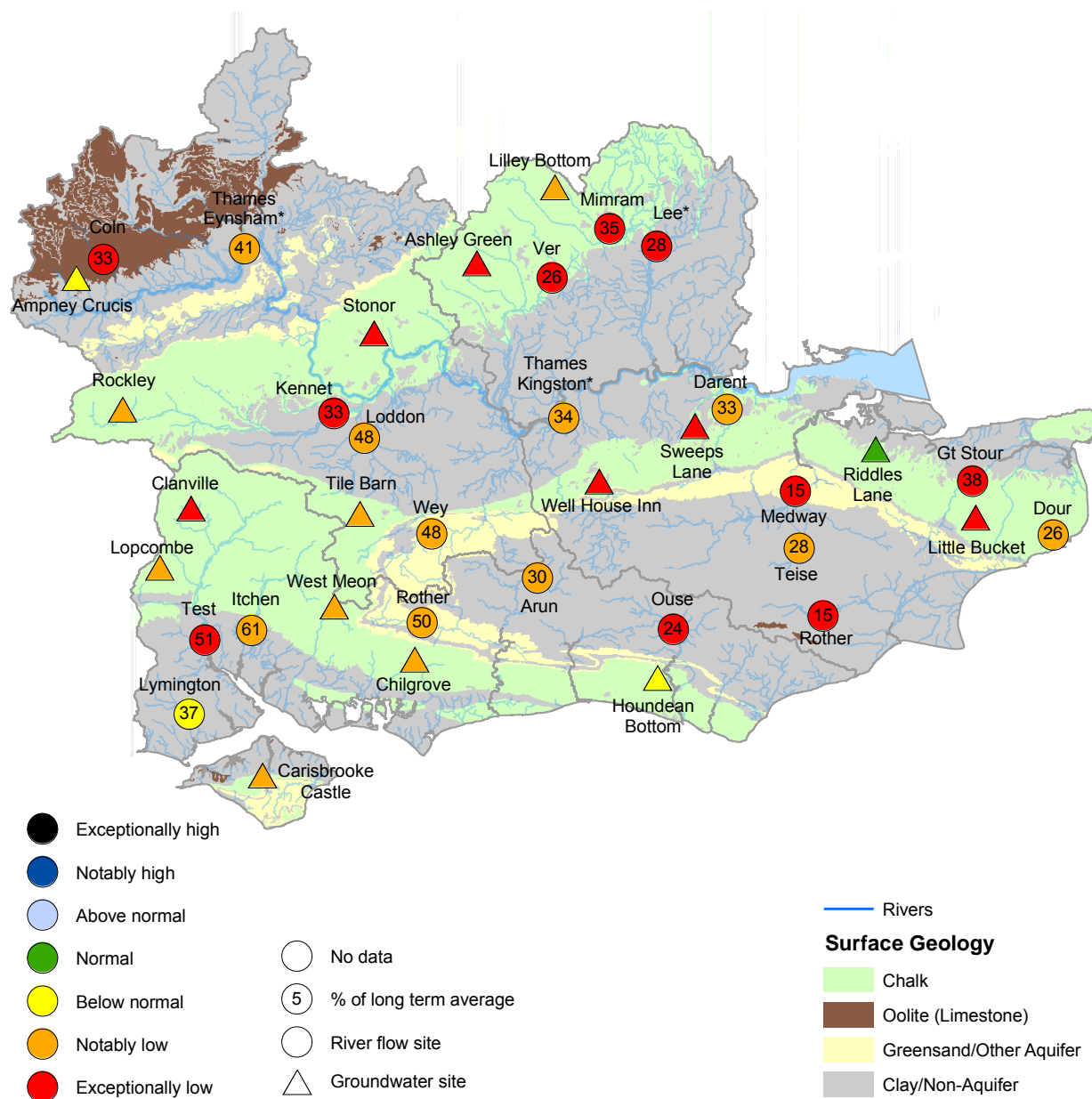
Rainfall Map



Data source: Rainfall from Thames Soil Moisture Model and National Climate Information Centre (NCIC) data Met Office © Crown Copyright.

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River Flow and Groundwater Status Map



Groundwater site status based on end of month level. Surface water site status based on mean monthly flow.

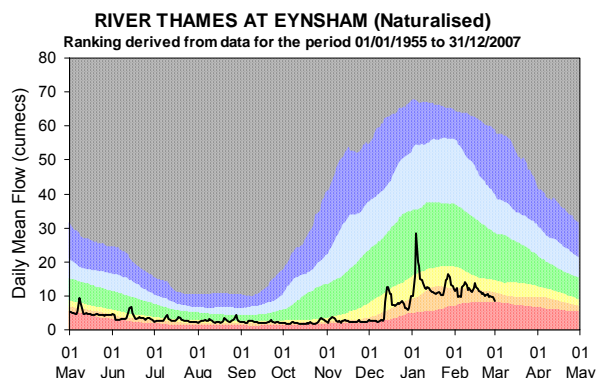
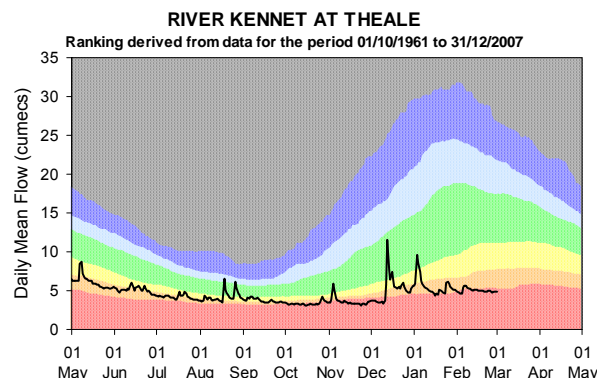
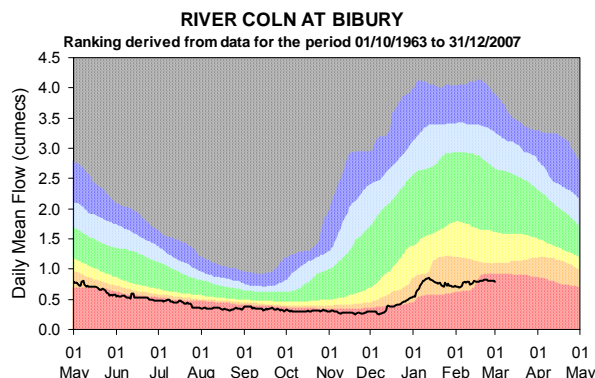
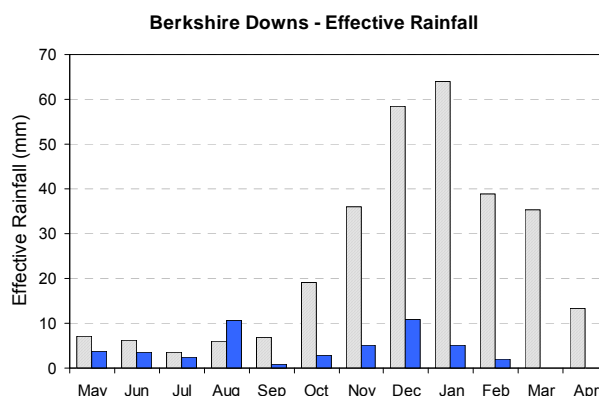
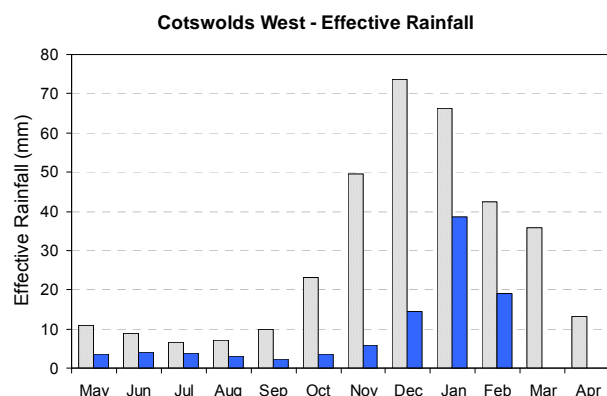
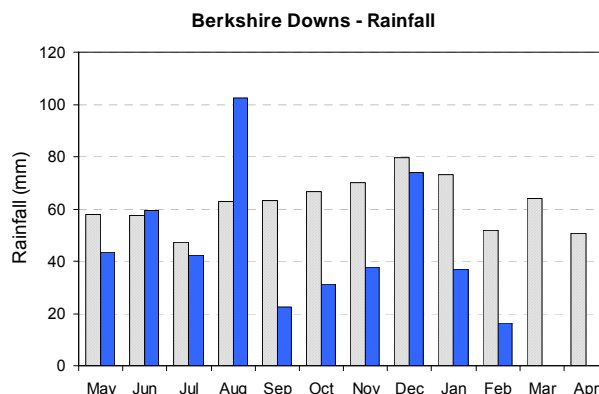
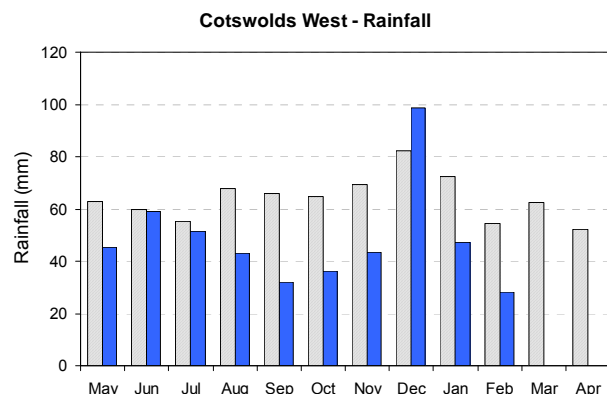
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West Thames – Page 1

Monthly total rainfall (mm)

Long-term average rainfall (mm)



Exceptionally high
Below normal

Notably high
Notably low

Above normal
Exceptionally low

Normal
Latest data

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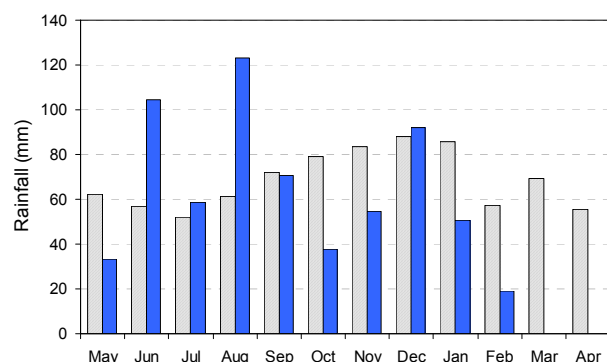
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West Thames – Page 2

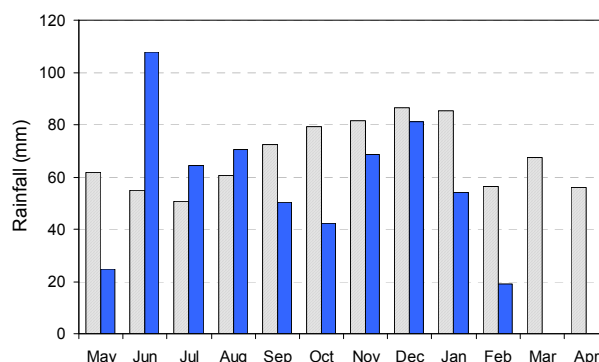
Monthly total rainfall (mm)

Long-term average rainfall (mm)

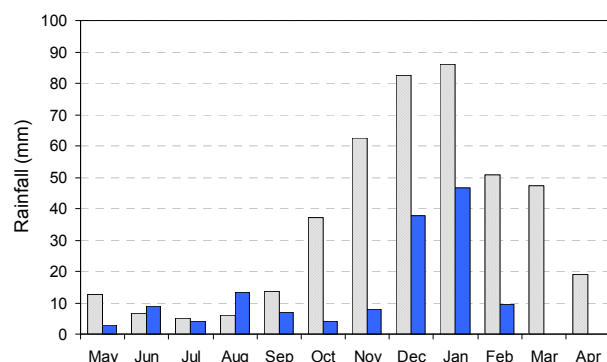
North Downs - Hampshire - Rainfall



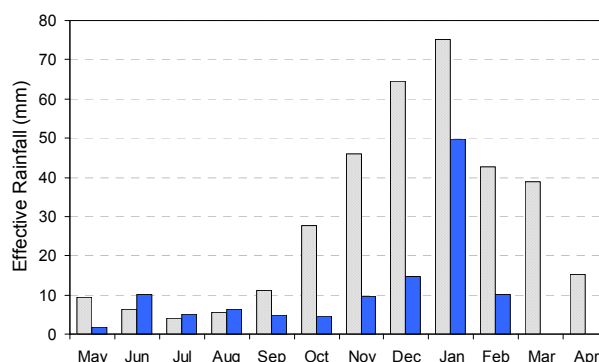
Wey Greensand - Rainfall



North Downs - Hampshire - Effective Rainfall

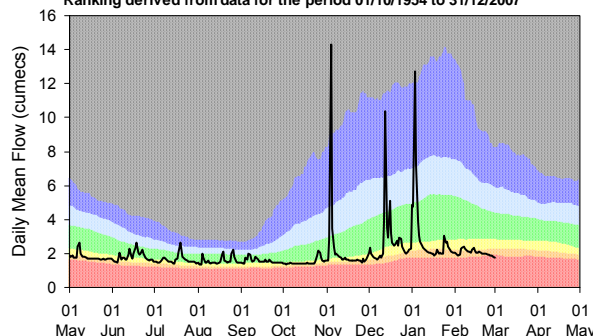


Wey Greensand - Effective Rainfall



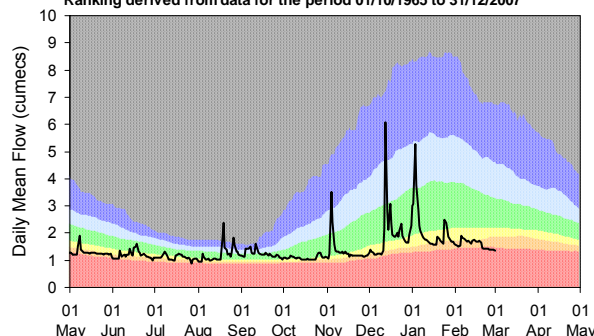
RIVER WEY AT TILFORD

Ranking derived from data for the period 01/10/1954 to 31/12/2007



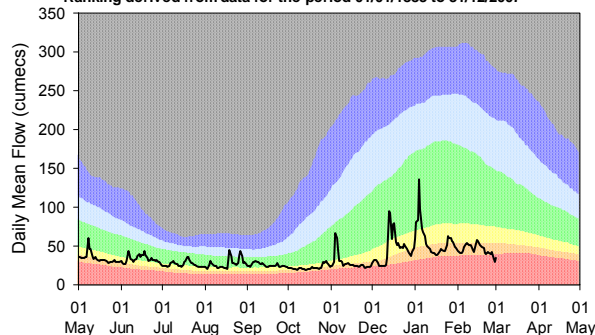
RIVER LODDON AT SHEEPBRIDGE

Ranking derived from data for the period 01/10/1965 to 31/12/2007



RIVER THAMES AT KINGSTON (Naturalised)

Ranking derived from data for the period 01/01/1883 to 31/12/2007



Exceptionally high
Below normal

Notably high
Notably low

Above normal
Exceptionally low

Normal
Latest data

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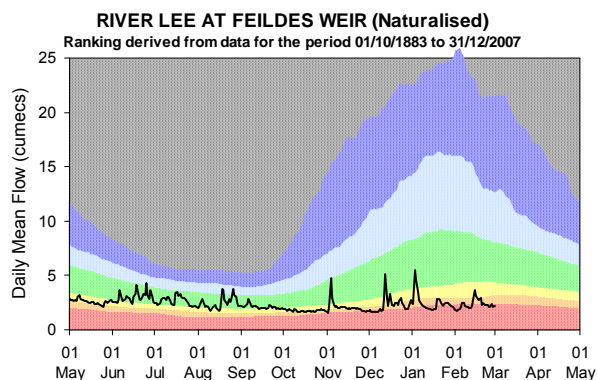
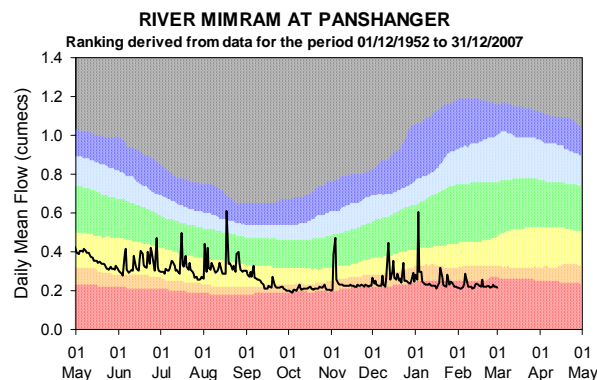
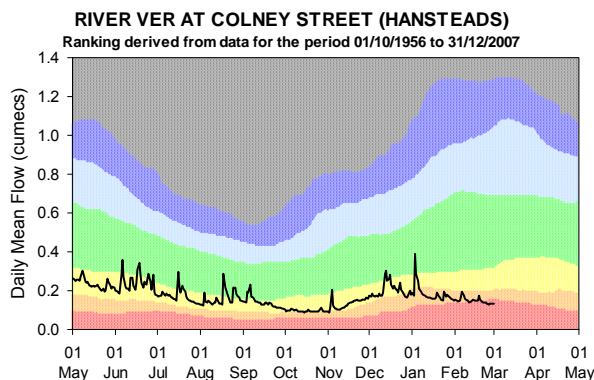
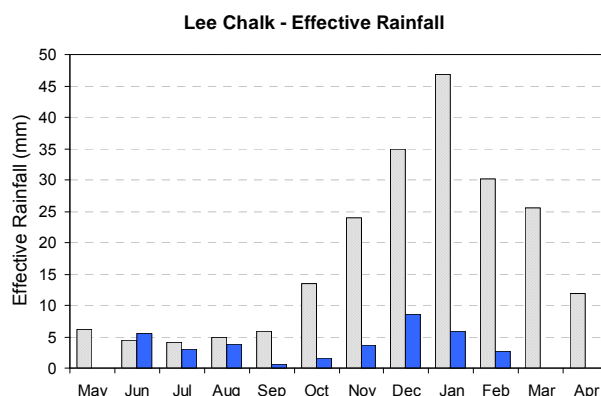
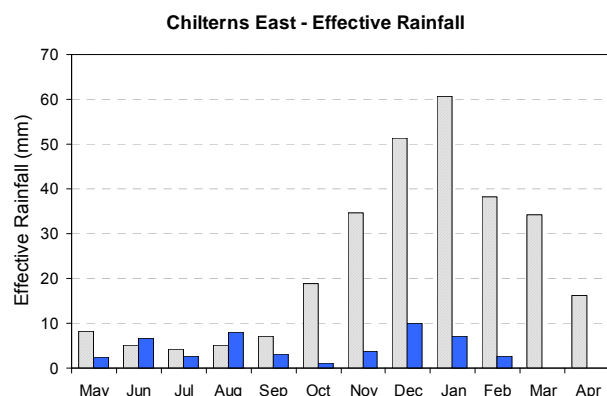
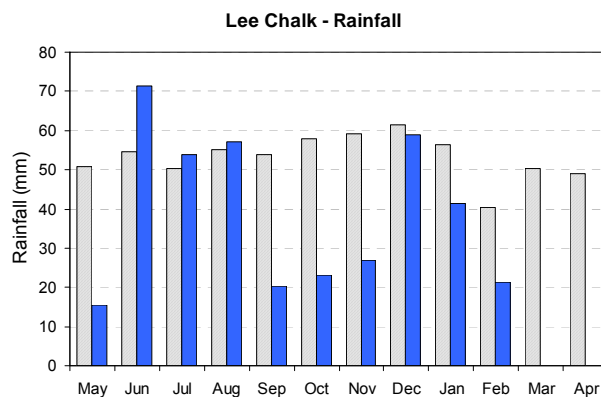
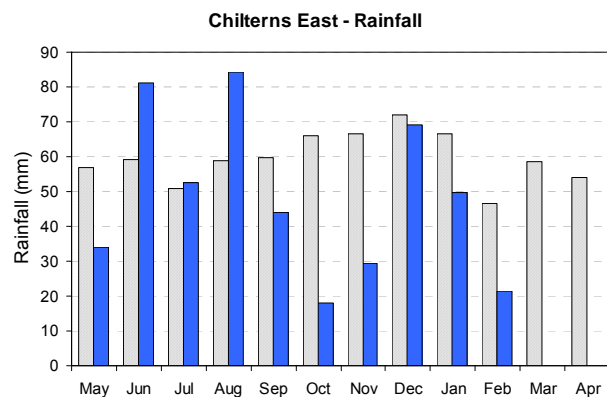
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North East Thames

Monthly total rainfall (mm)

Long-term average rainfall (mm)



Exceptionally high
Below normal

Notably high
Notably low

Above normal
Exceptionally low

Normal
Latest data

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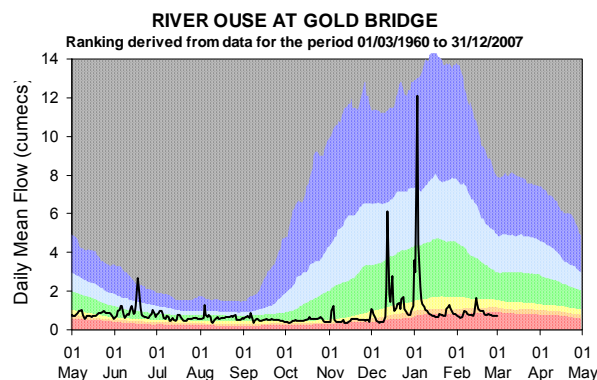
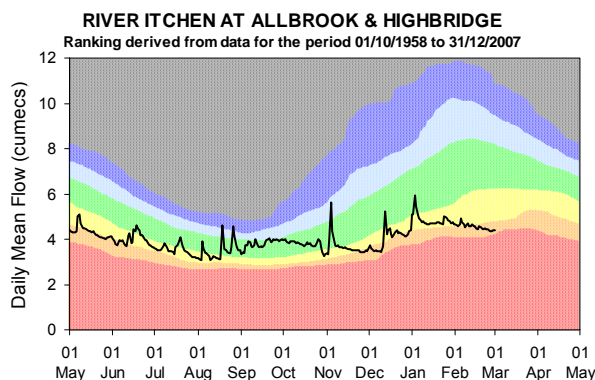
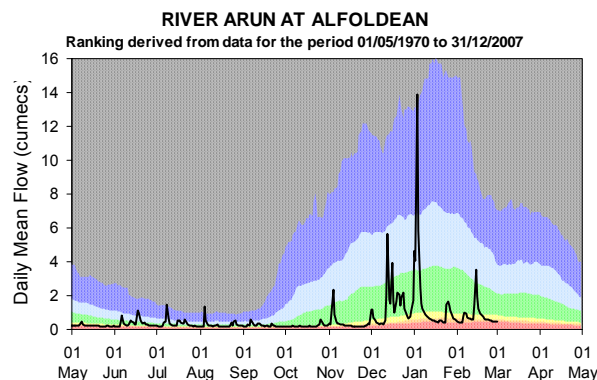
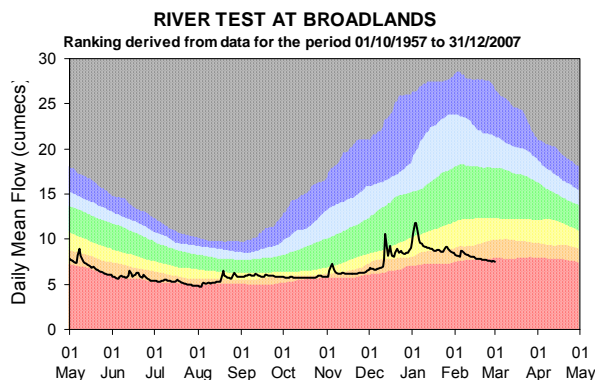
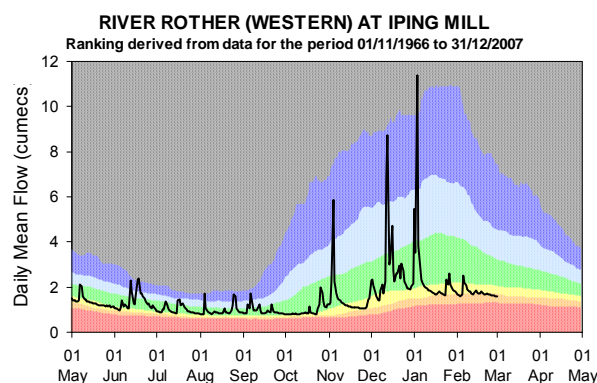
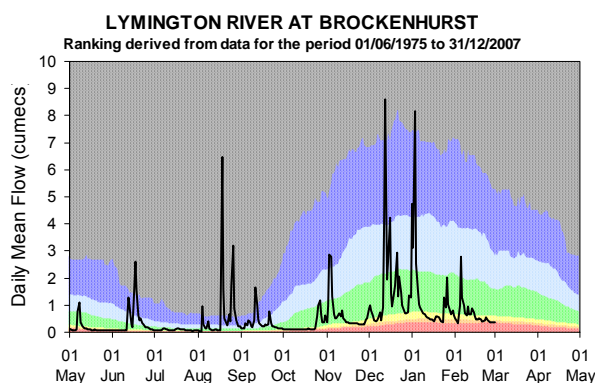
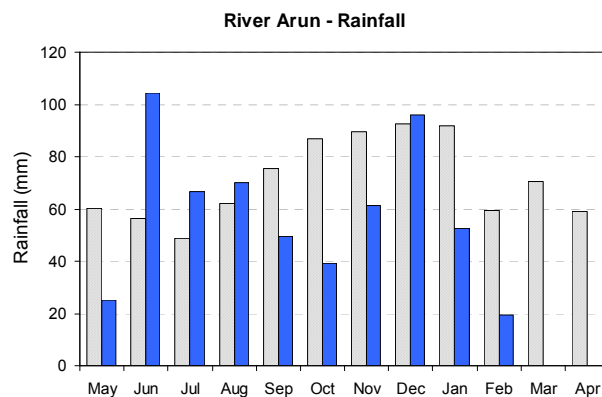
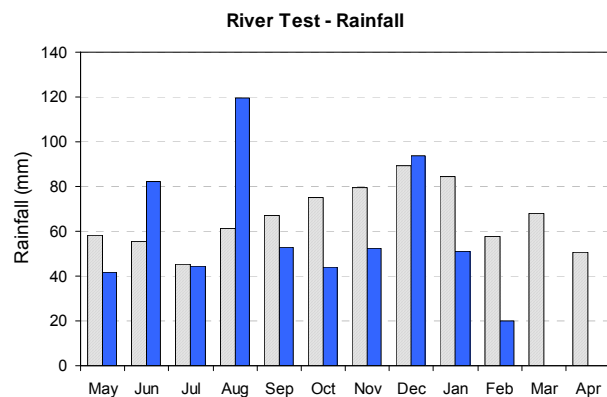
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Solent & South Downs

Monthly total rainfall (mm)

Long-term average rainfall (mm)



Exceptionally high
Below normal

Notably high
Notably low

Above normal
Exceptionally low

Normal
Latest data

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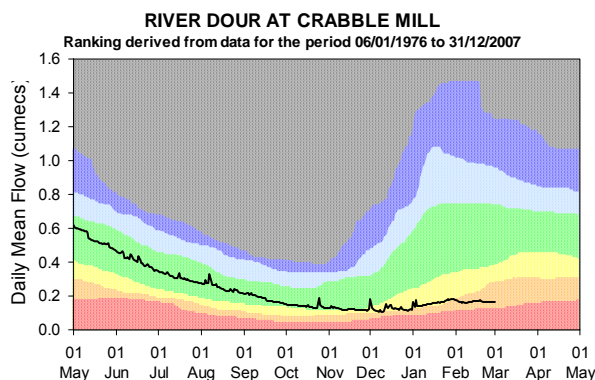
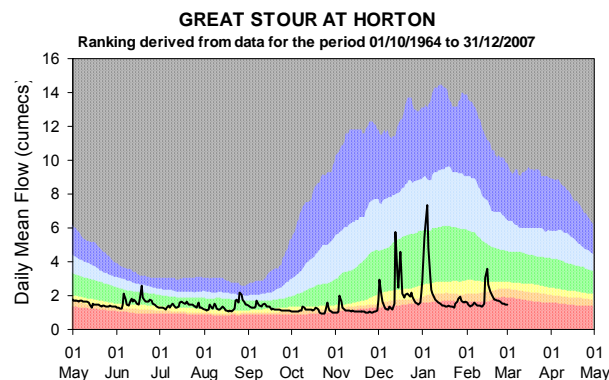
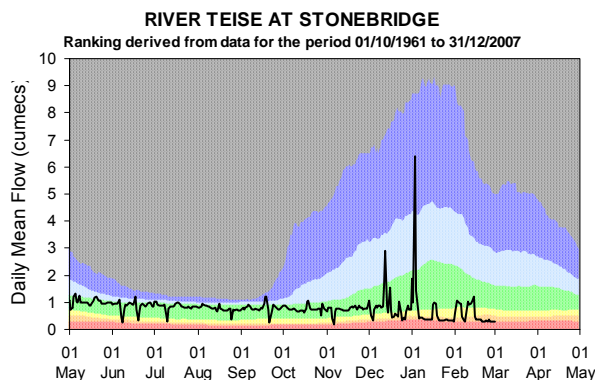
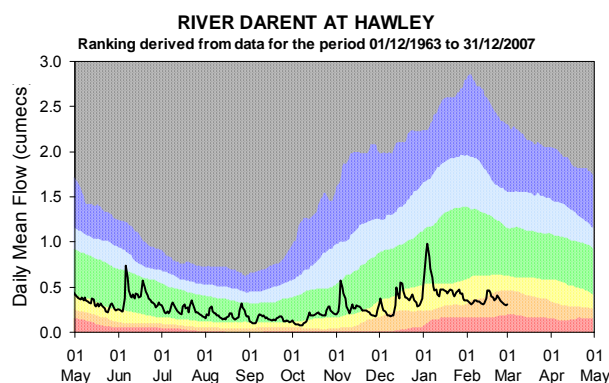
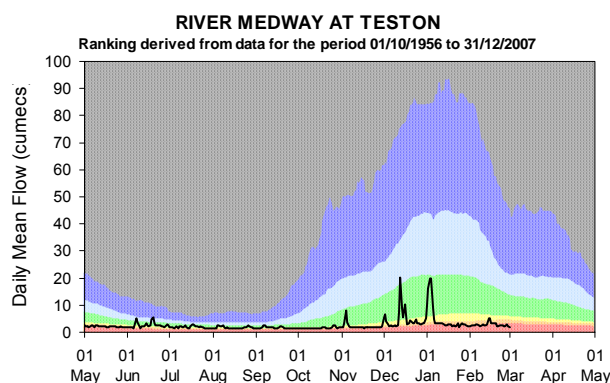
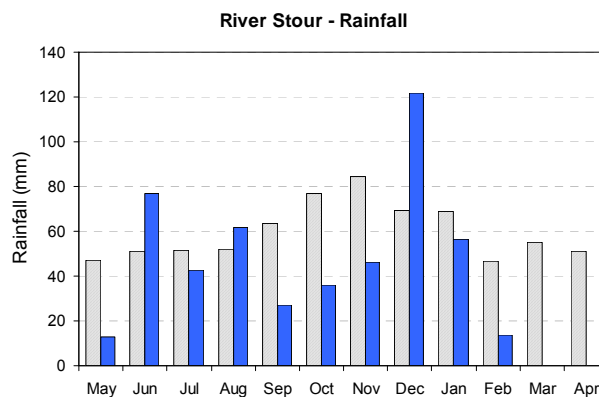
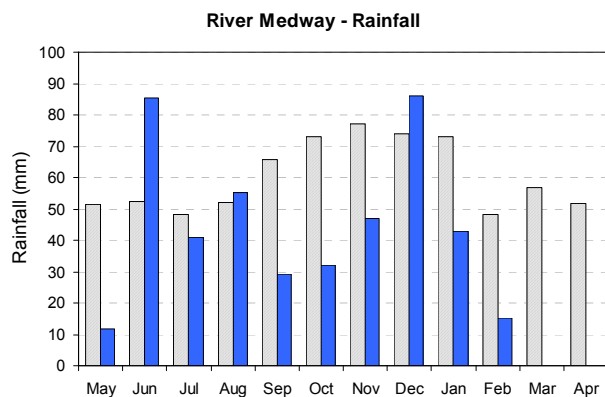
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Kent & South London

Monthly total rainfall (mm)

Long-term average rainfall (mm)



Exceptionally high
Below normal

Notably high
Notably low

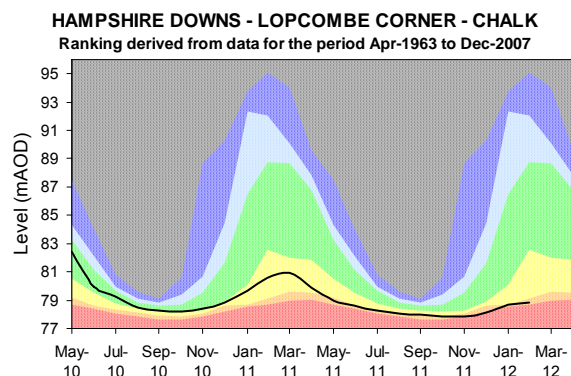
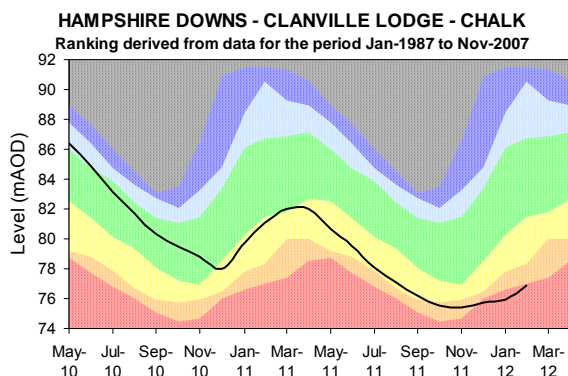
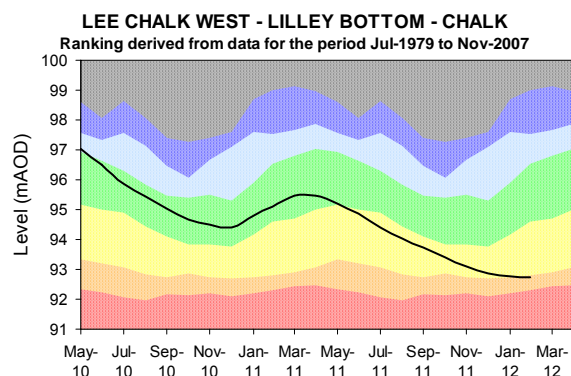
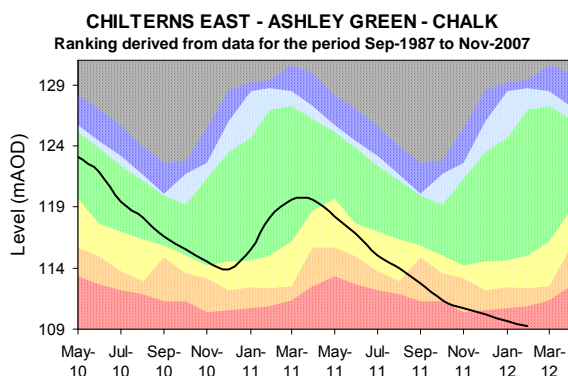
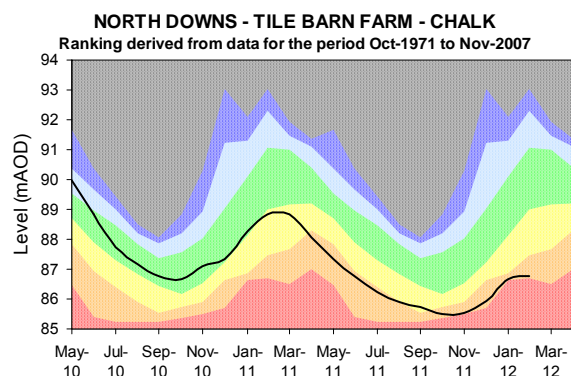
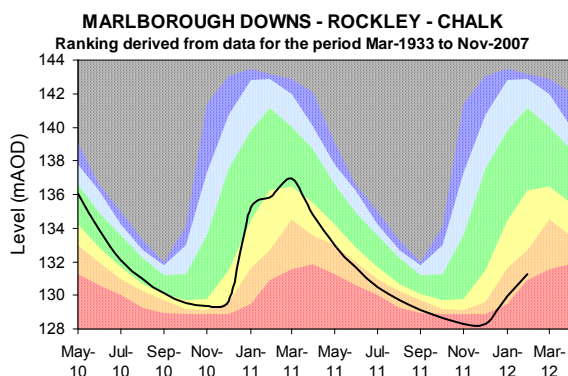
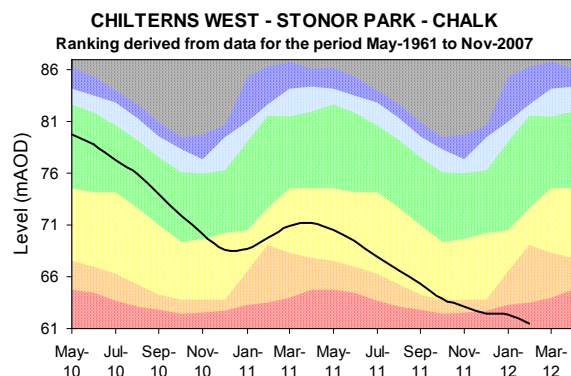
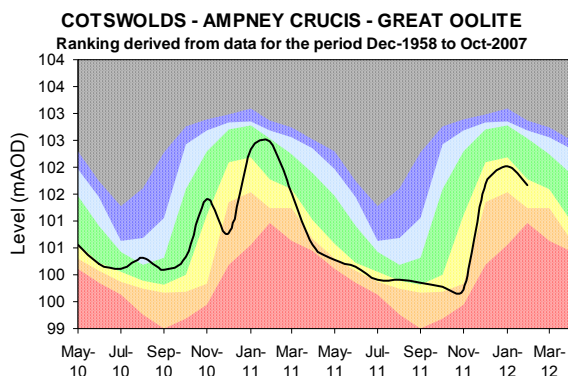
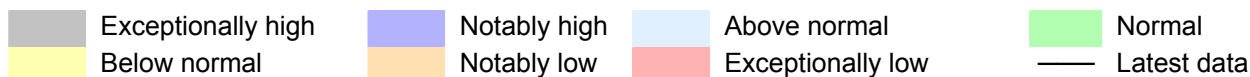
Above normal
Exceptionally low

Normal
Latest data

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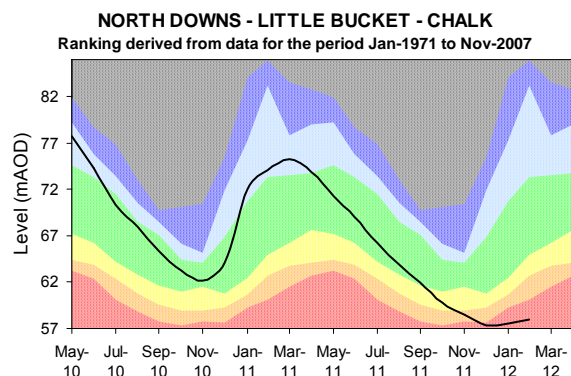
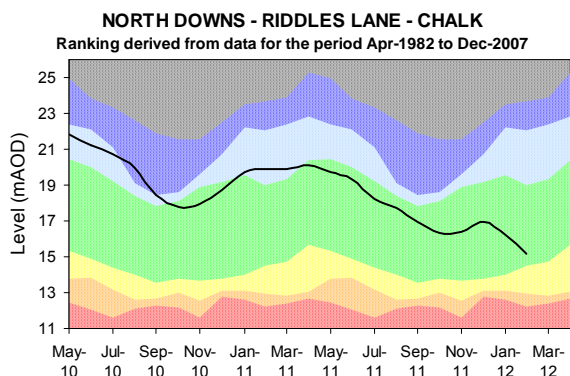
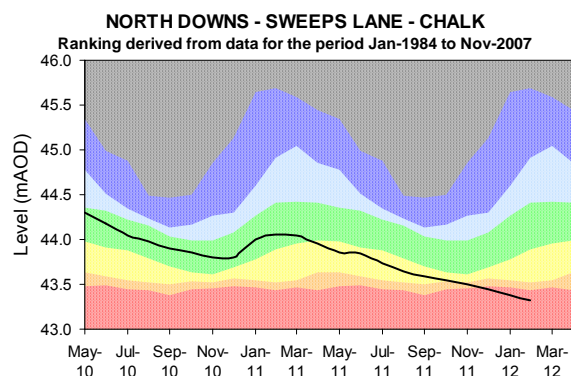
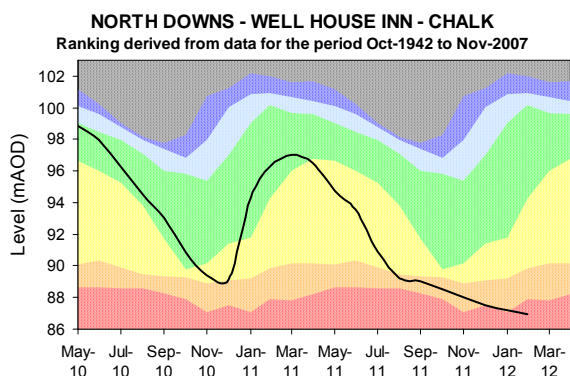
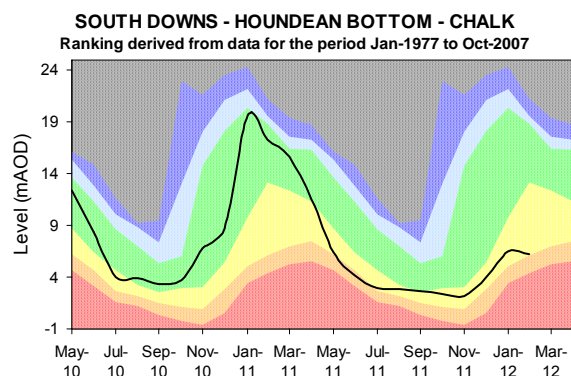
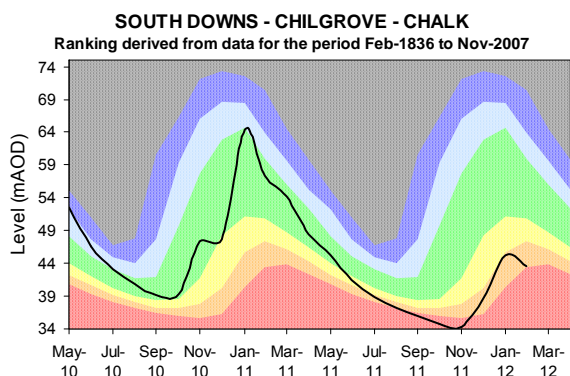
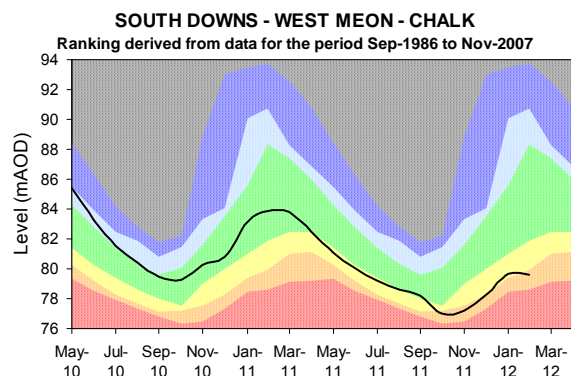
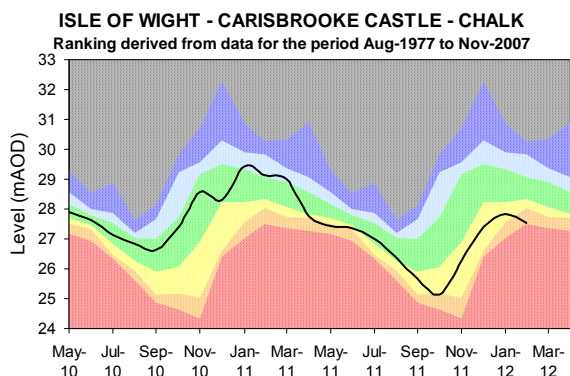
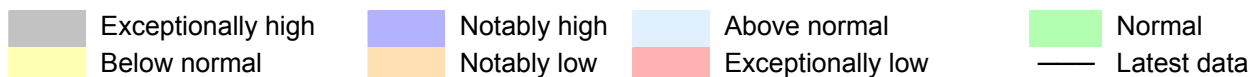
Groundwater Levels



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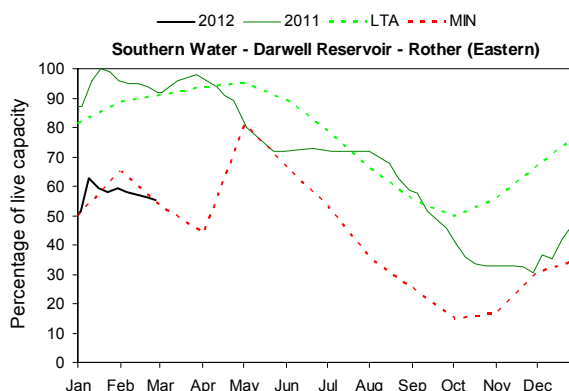
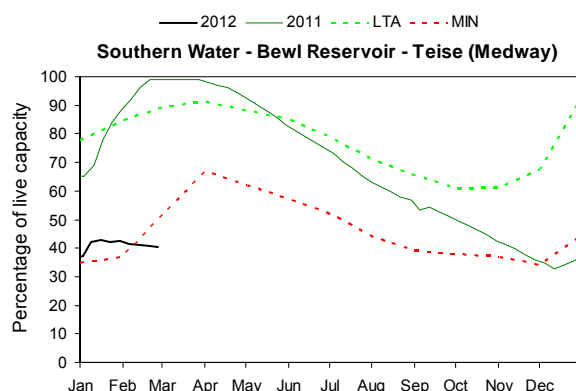
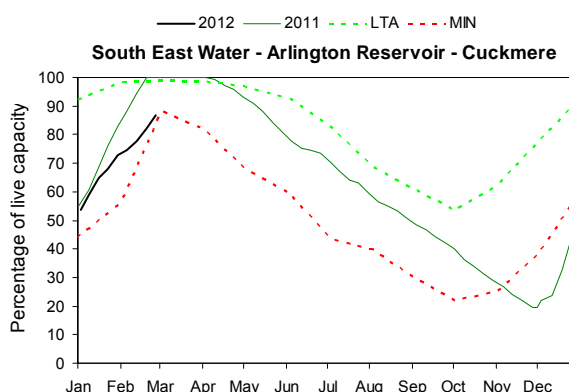
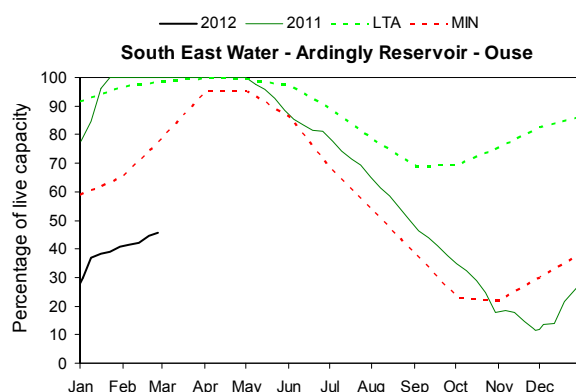
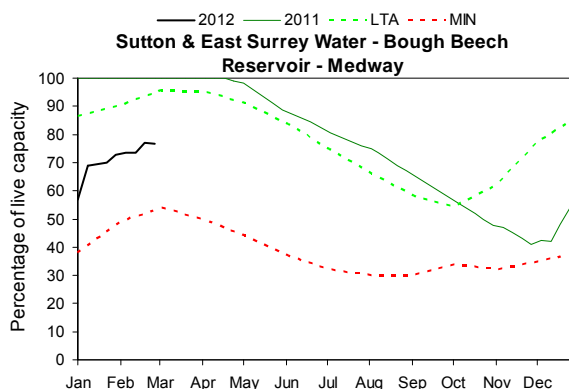
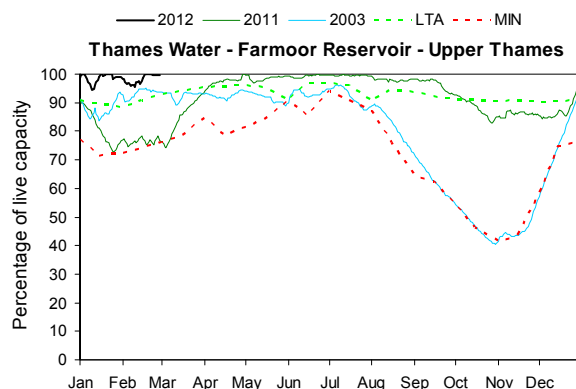
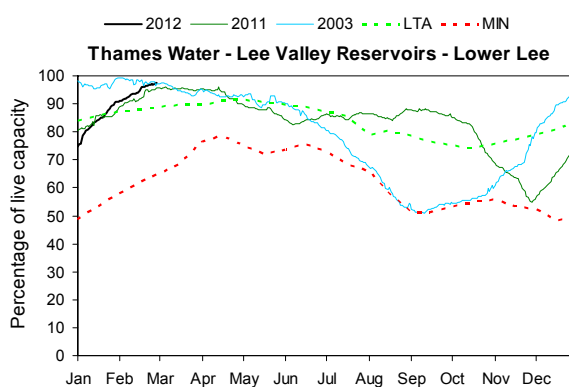
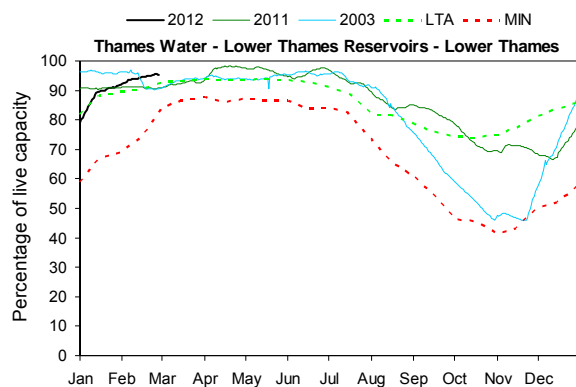
Groundwater Levels



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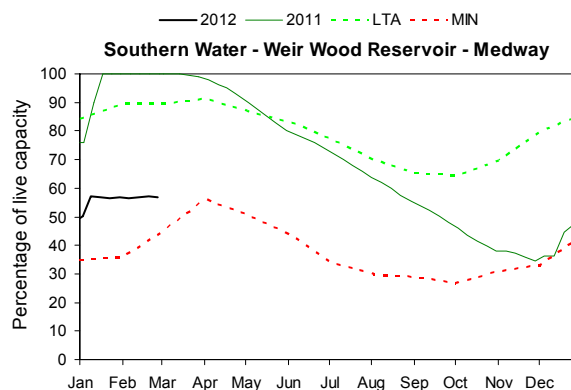
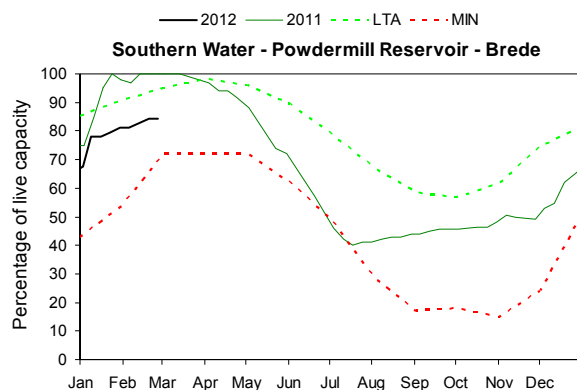
Reservoir Stocks



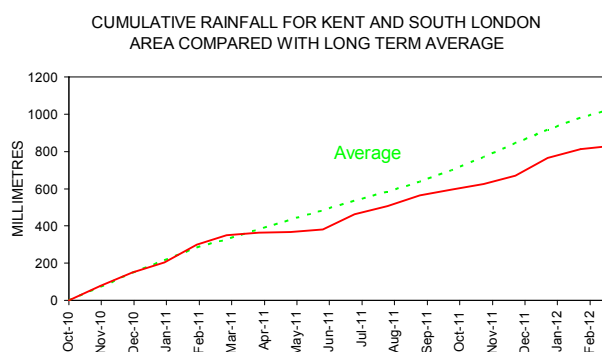
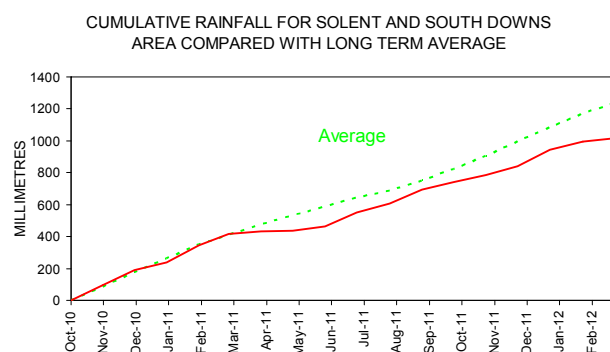
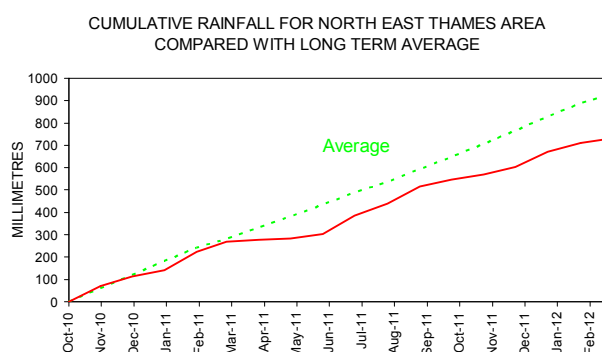
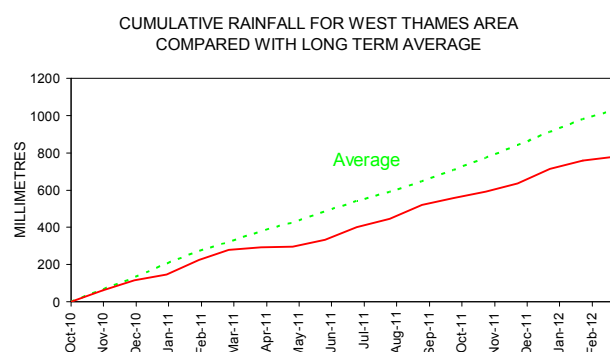
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Reservoir Stocks



Cumulative Rainfall



Summary of February 2012 Rainfall, Effective Rainfall and Soil Moisture Deficit calculated up to the 29th February.

Area		RAINFALL		EFFECTIVE RAINFALL		SMD (mm)		Last 5 Months (from 1 Oct)		Last 17 months (from 1 Oct)	
Number	Name	29 day Total (mm)	% LTA	29 day Total (mm)	% LTA	29-Feb-2012	End of Feb LTA	RAINFALL Total (mm)	% LTA	RAINFALL Total (mm)	% LTA
6010	Cotswolds - West (A)	28	52	19	45	5	3	254	74	797	72
6070	Berkshire Downs (G)	16	31	2	5	22	3	196	57	767	71
6130	Chilterns - West (M)	19	43	2	6	20	2	205	66	770	76
6162	North Downs - Hampshire (P)	19	33	10	20	5	2	255	65	1076	88
6190	Wey - Greensand (S)	19	34	10	23	6	3	265	68	994	83
WEST THAMES AVERAGE		20	42	7	19	12	3	215	67	783	76
6140	Chilterns - East - Colne (N)	22	46	3	8	14	2	188	59	797	77
6600	Lee - Chalk	21	53	3	10	56	3	172	62	650	71
NORTH EAST THAMES AVERAGE		21	53	1	4	37	3	166	59	705	76
H16	Test	20	35					262	68	976	83
H12	Itchen	20	33					272	68	1036	86
H04	Lymington	21	33					266	65	977	80
H09	Arun & Rother (Western)	20	33					269	64	1052	83
H20	Ouse	20	36					266	64	984	79
SOLENT & SOUTH DOWNS AVERAGE		21	36			8	3	276	69	1011	84
6230	North Downs - South London (W)	17	35	2	6	12	3	223	63	863	77
H10	Darent	19	42					211	68	782	79
H13	Medway & Teise	15	32					223	65	822	77
H15	Rother (Eastern)	18	32					271	68	928	78
H17	Stour	14	29					274	79	883	83
H03	Dover Chalk (Dour)	16	32					334	86	1006	86
KENT & SOUTH LONDON AVERAGE		15	34			30	8	233	71	814	79
THAMES AVERAGE		20	44	5	15	18	3	203	65	771	76
SOUTH EAST AVERAGE		19	39			22	4	233	68	854	80

This is a first estimate of areal rainfall, effective rainfall (i.e. recharge/runoff) and soil moisture deficit for key catchments.

There may be significant variation within each area which must be considered when interpreting these data.

Climate data is from the Thames Soil Moisture Model, NCIC and MORECS. Effective rainfall and SMD figures are not available for all catchments.

All data are provisional and may be subject to revision.

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Glossary

Term	Definition
Aquifer	A geological formation able to store and transmit water.
Areal average rainfall	The estimated average depth of rainfall over a defined area. Expressed in depth of water (mm).
Effective rainfall	The rainfall available to percolate into the soil or produce river flow. Expressed in depth of water (mm).
Groundwater	The water found in an aquifer
Recharge	The process of increasing the water stored in the saturated zone of an aquifer. Expressed in depth of water (mm).
Reservoir live capacity	The reservoir capacity normally usable for storage to meet established reservoir operating requirements. It is the total capacity less that not available because of operating agreements or physical restrictions. Only under abnormal conditions, such as a severe water shortage might this additional water be extracted.
Soil moisture deficit (SMD)	The difference between the amount of water actually in the soil and the amount of water that the soil can hold. Expressed in depth of water (mm).
Categories	
Exceptionally high	Value likely to fall within this band 5% of the time
Notably high	Value likely to fall within this band 8% of the time
Above normal	Value likely to fall within this band 15% of the time
Normal	Value likely to fall within this band 44% of the time
Below normal	Value likely to fall within this band 15% of the time
Notably low	Value likely to fall within this band 8% of the time
Exceptionally low	Value likely to fall within this band 5% of the time
Units	
cumecs	Cubic metres per second ($\text{m}^3 \text{s}^{-1}$)
mAOD	Metres Above Ordnance Datum (mean sea level at Newlyn Cornwall).